ON SUPPOSED TERTIARY AMMONITES.

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In the last issue of the Proceedings of the Academy of Natural Sciences (1882, Part 1, p. 94), Prof. Heilprin announces the discovery of Ammonites in rocks of tertiary age, viz.: the Tejon group of California.

Inasmuch as the verification of this statement would abrogate one of the most important distinctions between the cretaceous and tertiary fauna, I would ask Prof. Heilprin to reconsider his conclusion and review carefully the accessible facts bearing on the case. Undoubtedly the succession of living organisms on the earth has been unbroken, and somewhere there are connecting links between the faunas of all the different geological systems. A scheme of geological classification is, however, not only a convenience, but a necessity, and that at present in general use has been established by such an amount of concurrent testimony that modifications of it should only be accepted on the most undoubted evidence. The question of the age of the Tejon and Chico groups of California is not a new one. In 1855 Dr. Trask made the announcement in the first volume of the Proceedings of the California Academy of Sciences, now repeated by Prof. Heilprin, that is, the discovery of Ammonites in tertiary rocks. These he considered tertiary because they contained two fossils, pronounced by Mr. Conrad identical with his *Mactra albaria* and *Nucula divaricata*.

In my report to Lieut. Williamson in the Pac. R. Road Rept., vol. vi, Geol. p. 24, I question the accuracy of the conclusions of Dr. Trask, and the thorough investigation of the subject afterward by Mr. Gabb and Mr. Meek left no doubt whatever that the Chico Creek deposits—those in question—were of cretaceous age, as they were found to contain *Ammonites*, *Baculites Inoceramus* and other indisputable cretaceous fossils. The Tejon group in which Prof. Heilprin now records the existence of Ammonites overlies the Chico beds, and forms, according to Mr. Gabb, the summit of the California cretaceous series. But there are many species common to the Tejon and Chico groups, and where one goes the other must follow. After years of study on the spot and in the light of a greater array of facts than have been

before any other paleontologist, Mr. Gabb was decided in his reference of the Tejon group to the cretaceous system. The material which Mr. Conrad had on which to base an opinion was less abundant, but it was sufficient to satisfy him that his original classification of the rocks in question was erroneous. I would therefore ask in the interest of geological truth, that Prof. Heilprin would give to a question so important as this, very full consideration, and, if possible, make a study of the facts in the field before discarding the conclusions of Prof. Whitney, Mr. Gabb, Mr. Conrad, and Mr. Meek.